designated for "data-only" use.[70] The only restrictions on the remaining channels (Channels 171-180) are that they be licensed individually and that they be used for non-trunked operation.

(1) Phase II Assignment of Public Safety Service Channels (Channels 161-170)

44. In the *220 MHz Report and Order*, we decided that a set-aside for Public Safety Radio Service entities was appropriate because we believed that these channels would "prove useful in providing public safety eligibles with the means to more effectively coordinate their responses to safety-of-life situations such as large wildfires, disasters, and other emergencies."[71] We also indicated that, after five years, we would "assess public safety use of this limited set-aside with a view to reassigning this spectrum if it is underutilized."[72] Due to the freeze, in effect since May 24, 1991, on the acceptance of applications for 220 MHz channels, it has not been possible to assess accurately the use of these channels by the public safety community. Nevertheless, we continue to believe that an allocation of the 10 channels for use by Public Safety Radio Service eligibles is desirable. We seek comment on this tentative conclusion, but ask comment as to whether we should continue to provide this separate allocation solely for Public Safety users.

45. If the separate 10-channel allocation for Public Safety is retained, we propose a modification in the way these channels are assigned. That is, one of our primary purposes in allocating these channels was to enable Public Safety licensees to communicate with one another in times of emergency.[73] Our current licensing scheme does not provide for such interoperability because an individual Public Safety licensee in a particular area could obtain base station authorization for its exclusive use on all of the 10 available channels.[74] We therefore propose that five of the ten Public Safety Channels -- Channels 161-165 -- be allocated for shared base station use among all Public Safety eligibles. Under this licensing approach, Public Safety eligibles in a given area could coordinate amongst themselves to

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[70] *220 MHz Report and Order*, 6 FCC Rcd at 2362 (para. 44) (allocating Channels 181-200 for "data-only" use). However, we subsequently reallocated five of these channels for the exclusive use of licensees in the Emergency Medical Radio Service in the *EMRS Report and Order*, thus leaving Channels 186-200 as the current "data-only" channels. *See EMRS Report and Order*, 8 FCC Rcd at 1459 (para. 28).

[71] *220 MHz Report and Order*, 6 FCC Rcd at 2360 (para. 27).

[72] *Id.*

[73] *Id.*

[74] Section 90.720 of our Rules permits all Public Safety entities to operate mobile and portable stations on all of the Public Safety channels without separate authorization. 47 C.F.R. § 90.720.

locate base stations on these channels to maximize interoperability. We seek comment on this proposal.

(2) Phase II Assignment of EMRS Channels (Channels 181-185)

46. In our 1993 *EMRS Report and Order*, we decided to allocate five channels for use by EMRS entities "as a resource to meet current and future needs."[75] However, due to the existence of the current application freeze, which took effect prior to the allocation of the five EMRS channels, we are unable to determine the extent of demand for these channels by EMRS eligibles. We believe that five 220 MHz non-nationwide channels should continue to be reserved for the EMRS in order to provide spectrum for licensees involved in the delivery of emergency medical services,[76] but ask for comment as to whether we should retain this separate allocation for EMRS users. We also ask comment as to whether we should combine the 10 Public Safety channels and five EMRS channels into a single 15-channel allocation and allow EMRS and all other Public Safety entities to be eligible for these 15 channels. If we were adopt a single 15-channel allocation for both EMRS and Public Safety eligibles, we ask further whether we should modify our current allocation scheme to designate Channels 171-180 as the Public Safety channels so that these channels would be contiguous with the EMRS channels.[77]

47. Also, we tentatively conclude that we should continue to authorize both the Public Safety and EMRS channels on a first-come, first-served basis, with stations authorized at a single location, and with stations protected in accordance with our 120-km co-channel separation criteria. We ask comment, however, as whether these channels should be assigned, instead, over Commission-defined areas that might be appropriate for Public Safety or EMRS operations.

48. Before accepting applications for the Public Safety and EMRS channels, we intend to act on a Petition for Reconsideration of our 1993 *EMRS Report and Order* establishing the Emergency Medical Radio Service.[78] This petition, filed by Dr. Michael Trahos, asks that we allow certain entities authorized in the Special Emergency Radio Service under Part 90 of our rules (*e.g.*, physicians, disaster relief organizations, etc.) to be eligible for licensing on the 10 Public Safety channels. We will address this petition in a

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[75] *EMRS Report and Order*, 8 FCC Rcd at 1459 (para. 28).

[76] Section 90.27(a) of the Commission's Rules, 47 C.F.R. § 90.27(a).

[77] If we were to designate the Public Safety channels as Channels 171-180, we would revise our Table in paragraph 66, *infra,* to indicate that Channels 161-170, rather than Channels 171-180, would be designated for Regional licensing.

[78] *EMRS Report and Order,* 8 FCC Rcd at 1454.

soon-to-be-released Memorandum Opinion and Order dealing with the various petitions for reconsideration of the *EMRS Report and Order.*

49. On March 2, 1994, the American Red Cross (ARC) filed a petition for rulemaking, which also seeks eligibility to use the 220 MHz Public Safety channels for disaster relief organizations, but also requests further modification of our rules to enable disaster relief organizations to use the Public Safety channels in ways not currently permitted under our rules. That is, our rules generally restrict use of these channels to communications relating to the immediate safety of life; the ARC asks that disaster relief organizations additionally be permitted to use the Public Safety channels for "the establishment and maintenance of temporary relief facilities," "for limited training exercises incidental to an emergency communications plan," etc. We therefore ask comment in this proceeding on the Petition for Rulemaking of the American Red Cross.

(3) Phase II Assignment of Data-Only Channels (Channels 186-200)

50. In Phase II of licensing, we propose to eliminate the current "data-only" designation for Channels 186-200. This designation, which includes "analog non-voice transmissions" or "any digital transmission, voice or non-voice," was established to create a spectrum home for data and digital technologies, which we believed would "provide great improvements in spectrum efficiency over voice technology in this band."[79] We provided this allocation in 1991 because we were concerned that without it, the band would likely be populated by analog voice operations.[80]

51. We continue to believe that equipment designers and manufacturers can achieve significant spectrum efficiencies by employing advanced digital modulation schemes on 5 kHz channels. Furthermore, in today's widely varying communications marketplace, there is an ever-increasing demand for non-voice communications, such as paging, and services using digital modulation for voice communication. We therefore expect that, because of the growing demand for these types of services, a significant number of Phase II licensees will, upon obtaining regional or nationwide 220 MHz authorizations, choose to implement data and digital systems.

52. We find, however, that it remains unnecessary for us to provide a permanent allocation exclusively for data and digital operations. Rather, we believe that the best use of the spectrum should be determined by the marketplace. We therefore propose to eliminate the current "data-only" channel allocation in Phase II of licensing and seek comment on this proposal. Also, we have no reason to believe that most of the over-300 Phase I licensees who requested and were granted authorization on the 10 available data-only channels will not

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[79] *220 MHz Report and Order*, 6 FCC Rcd at 2362 (paras. 40 and 43).

[80] *Id.*

construct and operate data and digital systems and that this will provide an excellent test-bed envisioned in the *220 MHz Report and Order* for manufacturers producing these types of systems. However, we do not believe that it is necessary to continue to mandate this use of these channels. Instead, we propose that Phase I licensees authorized on these channels be permitted to construct non-"data only" systems if they so choose. We seek comment on this proposal.

c. Proposals for Assignment of the Remaining 125 Non-Nationwide Channels

53. Having proposed to maintain the existing Public Safety and EMRS channel allocation, we now turn to the licensing of the remaining 125 non-nationwide channels (*i.e.*, the 100 channels currently allocated for five-channel trunked operations, Channels 171-180 and Channels 186-200).

(1) Comments in CMRS Proceeding Regarding the 220 MHz Service

54. In the comments received in response to the *CMRS Further Notice* relating to the 220 MHz band,[81] interested parties discussed matters of whether, when, and how we should proceed with the next phase of licensing the 220 MHz band. Among the significant issues raised were whether five-channel, stand-alone 220 MHz stations would be viable competitors to other mobile communications services and whether 220 MHz systems should be licensed on a regional basis. USM, for example, suggested that:[82]

> [G]iven the extremely small amount of spectrum granted each 220 MHz licensee and the economic realities of competition in today's communications marketplace, the only potential for successful utilization of a five-channel commercial narrowband license is as part of a multi-site system offering full market coverage, feature-rich equipment and a depth of channel capacity . . . . [G]enerally, a 5-channel stand-alone system is simply not economically feasible.

SunCom, in a Petition for Declaratory Ruling that was incorporated into the proceeding,[83] argued that "multiple license capacity and efficiencies are required for a competitive and cost-effective 220 MHz system," that multiple licenses are "required to assure competitive

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[81] The comments and reply comments are listed in Appendix B.

[82] USM Comments at 6.

[83] In its Request for Declaratory Ruling, SunCom sought permission to aggregate non-nationwide 220 MHz five-channel blocks on a regional basis so that it could provide multiple-market service on a single system. *See CMRS Further Notice*, 9 FCC Rcd at 2872 (para. 38).

220 MHz system coverage," and that 220 MHz system "capacity and coverage are needed to demonstrate viability and sustainability to prospective subscribers."[84] SmartLink, in its comments, "disagee[d] with SunCom's conclusion that 'five-channel trunked 220 MHz licenses . . . are simply not in themselves commercially viable'" and suggested that 5-channel systems "should be given the opportunity to develop their own market presence and become viable."[85]

55. SEA, in arguing against granting the relief requested by SunCom, stated that "at the present early stage in the development of the 220 MHz service, it is premature to revisit the fundamental channel allotment and licensing framework that has been adopted by the Commission" and that "that framework should be given an opportunity to prove itself in the marketplace before adoption of the kinds of fundamental changes sought by SunCom."[86] SEA further stated that "if, after a reasonable period of operation under the current rules, the Commission decides that the present [licensing approach] . . . is inadequate for some reason, then the Commission can set out to create a new nationwide or regional licensing framework."[87] Simrom, Inc. ("Simrom"), while supporting the relief requested by SunCom and stating that "it forms a valid basis for assisting the development of the 220 MHz industry," did not agree with SunCom's assessment that stand-alone five-channel 220 MHz system would not be viable, arguing that "the demand characteristics at the licensed location will determine the viability of each system."[88] Simrom further argued that interconnected 220 MHz CMRS service is substantially similar to narrowband PCS service and that the Commission should therefore adopt PCS-like area-based licensing for the 220 MHz CMRS service.[89] Finally, Simrom suggests that the Commission should "[purge] the database of unconstructed systems" after the expiration of the construction deadline for non-nationwide 220 MHz systems and then accept new applications for "BTA-wide, MTA-wide, regional or nationwide authorizations."[90]

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[84] SunCom Comments at 3, 4, 5.

[85] SmartLink Comments at 6, (*citing* SunCom Petition for Waiver at 12).

[86] SEA Comments at 10, 12.

[87] *Id.* at 16.

[88] Simrom Comments at 9 and n. 9.

[89] *Id.* at 7-8.

[90] *Id.*

(2) Initiation of Phase II Licensing

56. Some of the comments in response to the *CMRS Further Notice* contend that we should not proceed with the next phase of licensing the non-nationwide 220 MHz channels until the success of our existing licensing approach can be adequately assessed.[91] We could not undertake such an assessment, however, until some time after our existing non-nationwide licensees have begun operation and we have an opportunity to analyze whether, for example, commercial operations have been competitive in the mobile communications marketplace and whether the spectrum acquired by non-commercial entities was adequate to serve their internal communications needs. We believe that it would be inappropriate to continue to withhold the acceptance of new applications for 220 MHz spectrum for any additional time to allow us to evaluate extensively the success of our existing licensing scheme, even assuming that we could develop criteria and methodologies for such an evaluation. While our proposals for Phase II licensing of the 220 MHz band will not preclude the continued use of spectrally efficient 5 kHz technology, they will not mandate the types of technology that will be used and the services that will be offered. Thus, we believe that it is incumbent upon us to go forward with our Phase II plan so that such more widespread and varied 220 MHz services can be made available to the American public. We therefore tentatively conclude that we should initiate Phase II of licensing of the non-nationwide channels, and we ask for comment on this tentative conclusion.

(3) Eligibility

57. Currently, the 125 non-nationwide 220 MHz channels are available to applicants intending to provide subscriber-based services as well as applicants intending to use spectrum for their internal use. We propose in Phase II of licensing to continue to make these channels available on an equal basis to all such applicants. We request comment on this proposal and specifically ask whether this licensing method will provide sufficient spectrum for all types of applicants.

(4) Licensing Areas

58. Currently, most non-nationwide 220 MHz licensees are authorized on single-station, or "stand-alone," five-channel systems.[92] However, in this proceeding, we are proposing extensive changes in the types of operations that will be permitted in the 220 MHz band. These changes will allow a much broader array of communications offerings to be

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[91] *See, e.g.*, SEA Comments at 15-16.

[92] We refer here to the twenty five-channel trunked assignments. Approximately 80 percent of the Phase I licensees are assigned on these channels. The remaining "non-trunked" assignments may consist of between one and 10 channels.

provided, which could result in the 220 MHz service evolving into a service similar, for example, to the narrowband PCS or 900 MHz SMR services. In the *CMRS Third Report and Order*, we concluded that the 220 MHz service was potentially competitive and therefore substantially similar to other CMRS services[93] and this conclusion was based on the service as it existed at that time, *before* the adoption of our proposals herein to create a more expansive 220 MHz service. In the narrowband PCS and 900 MHz SMR services, we authorized spectrum over defined, geographic areas rather than on a single station basis to facilitate the efficient provision of a wide variety of communications services.[94] We agree with Simrom that the future of the 220 MHz service lies in "PCS-like area-based licensing"[95] and thus believe that Phase II non-nationwide 220 MHz spectrum also should be authorized within such areas.

59. We therefore propose that Phase II licensees on the 125 non-nationwide channels be permitted to provide service within the following prescribed geographic areas: (1) 172 geographic areas defined as "Economic Areas" ("EAs") by the Bureau of Economic Analysis (BEA), Department of Commerce ("EA licenses")[96] and, (2) in geographic areas defined by five large regions ("Regional licenses").[97] Licensees would be permitted to operate any number of base stations within their authorized area without being required to obtain a separate authorization for each station.

60. Our licensing proposal is based on a number of considerations. Specifically, if the 220 MHz service does remain primarily a dispatch service, then authorization over areas the size of EAs would still allow 220 MHz licensees to serve effectively customers who

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[93] *CMRS Third Report and Order*, 9 FCC Rcd at 8021 (para. 58), 8026 (para. 67), and 8031-33 (para. 74).

[94] *Id.* at 8050 (paras. 114-115); *Narrowband PCS Report and Order*, 8 FCC Rcd at 7166 (paras. 26-27).

[95] Simrom Comments at 8.

[96] The BEA has divided the Nation into regional economic areas that consist of metropolitan areas that are centers of economic activity and their economically-related surrounding counties. In February 1995, the BEA concluded a redefinition of the areas based on newly available information on commuting patterns and adopted a new configuration of 172 EAs. *See* Proposed Redefinition of the BEA Economic Areas, 59 Fed. Reg. 55,416-20 (Nov. 7, 1994) and Final Redefinition of the BEA Economic Areas, 60 Fed. Reg. 13,114-18 (March 10, 1995). *See also* Kenneth P. Johnson, "Redefinition of the BEA Economic Areas," *Survey of Current Business*, Feb. 1995, 75-81. We propose to adopt the BEA's list of 172 EAs to define the smallest geographic areas proposed for Phase II licenses because of the accuracy of the redefined list in reflecting the current major markets on a local regional basis. Appendix C includes the BEA's list of the newly defined 172 EAs with their assigned Codes and a map identifying the boundaries.

[97] Appendix D contains a list of the five proposed regions.

require communications capability extending over economically-linked areas such as EAs. Alternatively, if the service evolves into one where an increased variety of mobile and fixed services are provided, then the ability of 220 MHz licensees to operate over larger areas than currently provided under Phase I (*i.e.*, single stations with a service area of no more than 28 miles)[98] may be necessary to enable them to compete effectively with licensees in various other communications services authorized over similarly-sized areas (*e.g.*, MTA and BTA licensees authorized in the PCS and SMR services).

61. If we license Phase II 220 MHz systems in regions geographically similar to the five regions used by narrowband PCS licensees, the 220 MHz licensees may be able to compete effectively with their counterparts in that service. Also, in licensing the 220 MHz band in the EAs and Regions, we have created an overall licensing scheme for the 220 MHz Radio Service that provides for three different licensing areas, ranging in size from nationwide to EA. This will enable 220 MHz licensees to serve a wide variety of communications needs. Because EAs generally fall between BTAs and MTAs in size, we believe that licensing in EAs will generally allow licensees to provide the same types of service offered by licensees authorized in BTAs and MTAs in other wireless services. We ask comment, however, as to whether we should license the 220 MHz band in either BTAs or MTAs instead of, or in addition to EAs and Regions. Finally, we believe that licensing 220 MHz spectrum in EAs and Regions will also serve the needs of non-commercial entities, many of which may have communications requirements that span areas the size of EAs or larger. We seek comment on our proposal to employ EA and Regional licensing for the 220 MHz band.

(5) Channel Allocation

62. We now address how the 125 EA and Regional channels should be assigned within these geographic areas. The Phase I trunked channels are currently authorized in five-channel blocks.[99] With the 220 MHz service now only beginning to develop, it is difficult to determine, in Phase II of licensing, whether we should continue to authorize non-nationwide channels in this manner or whether we would better serve the needs of future 220 MHz licensees by licensing non-nationwide channels in different-sized blocks. With our proposal to license Phase II spectrum over much wider areas than provided for under Phase I (*i.e.*, EAs and Regions versus single station authorizations), we believe that it will generally be necessary to allocate more than five channels to each Phase II licensee. EAs will, on

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[98] *220 MHz Report and Order*, 6 FCC Rcd at 2371 (para. 115).

[99] Section 90.721 of the Commission's Rules, 47 C.F.R. § 90.721.

average, be eight times larger than the service area of a Phase I station,[100] and thus a five-channel allocation, amounting to a total of 25 kHz of spectrum (50 kHz when paired), may not serve the needs of 220 MHz licensees attempting to provide communications service to customers in areas the size of EAs. Also, if we adopt our proposals to allow Phase II licensees to aggregate their authorized 5 kHz channels or provide a wider variety of communications services, such as paging, such licensees will likely require more spectrum than is available through licensing on only five 5 kHz channels.

63. On the other hand, Phase II licenses, particularly those intending to use the spectrum for their internal purposes, may not need more than five channels, even if those channels are employed over an EA-sized area. To accommodate the potential needs of all EA licensees, including licensees who may wish to offer more diverse communications services, we propose to authorize Phase II EA licenses in five- and 10-channel blocks. We believe that Regional licensees, who will be offering communications services to a much larger population of users, should be authorized a larger number of channels and therefore propose that Regional licenses be assigned in 10-, 15- and 20-channel blocks. EA and Regional licensees needing less spectrum than provided through these particular authorizations could assign channels to other licensees in accordance with our partitioning proposals.[101] We request comment on these proposals.

64. The next matter to be addressed is whether the EA and Regional channel blocks should be composed of non-contiguous or contiguous channels. In the *220 MHz Notice*, we explored this issue and suggested that to "introduce [trunking] on contiguous narrowband channels may be less viable or desirable from both a technical and economic standpoint."[102] However, we noted that authorization of contiguous channel assignments would be the same concept we applied in channelizing the 900 MHz band.[103] In adopting this contiguous

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[100] The land area of the United States is approximately 3.5 million square miles and there are 172 EAs; therefore, the area of the average EA is approximately 20,000 square miles. The coverage area of a 220 MHz station operating at maximum power and antenna height (*i.e.*, with a 38 dBuv/m field strength contour at 28 miles) is approximately 2,500 square miles.

[101] *See* para. 176, *infra*.

[102] *220 MHz Notice*, 4 FCC Rcd at 8597 (para. 27).

[103] *Id.* at 8597 n. 49 (para. 27). In allocating the 896-901/935-940 MHz band for private land mobile use, we authorized 40 channel blocks, with each block composed of 10 contiguous 12.5 kHz channels. *See* Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems, GEN Docket No. 84-1231, Amendment of Parts 2, 15 and 90 of the Commission's Rules and Regulations to Allocate Frequencies in the 900 MHz Reserve Band for Private Land Mobile Use, GEN Docket No. 84-1233, Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for, and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, GEN Docket No. 84-1234, Report and Order, 2 FCC Rcd 1825 (1986)

channel assignment approach in the *900 MHz Allocation Order*, we observed that to do so could "provide increased flexibility to employ spectrum efficient digital systems that may become available in the near future."[104] In the *220 MHz Report and Order*, we ultimately decided that increasing spectrum efficiency was of prime importance and therefore adopted a non-contiguous channel assignment scheme because it would provide a "more proficient and economic way to integrate . . . [trunking] into the new narrowband technology."[105]

65. We continue to believe that trunking is an effective way of increasing spectrum efficiency. However, we now believe that the possible benefits that could be obtained from enabling licensees to employ contiguous channels, *e.g.*, the ability to employ spectrum efficient digital systems,[106] outweigh the potential technical or economic advantages of developing narrowband trunking systems. Further, as we observed in the *220 MHz Notice*, the use of contiguous channels in the 220 MHz band would by no means "preclude the use of trunking technology."[107] We thus propose that the spectrum assigned to EA and Regional licensees be composed of contiguous channels blocks. We seek comment on this proposal.

66. The following is our proposed allocation plan for the assignment of the non-nationwide 220 MHz channels:

NON-NATIONWIDE 220 MHz
PROPOSED CHANNEL ALLOCATION PLAN

EA BLOCK	CHANNELS
Channels 61-70	10
Channels 71-80	10
Channels 91-100	10

(*900 MHz Allocation Order*); Section 90.613 of the Commission's Rules, 47 C.F.R. § 90.613.

[104] *900 MHz Allocation Order*, 2 FCC Rcd at 1835 (para. 74). Digital systems that employ Time Division Multiple Access (TDMA) technology, for example, would require channels wider than 5 kHz of spectrum and thus the aggregation of 5 kHz channels would be necessary to enable this technology to be used.

[105] *220 MHz Report and Order*, 6 FCC Rcd at 2358 (para. 16).

[106] In the *220 MHz Report and Order*, one commenter suggested the adoption of 40 blocks of five contiguous 5 kHz channels each because of the spectrum efficiency that would result from digital radio systems. *Id.* at 2358 (para. 14, *citing* Dayton Comments).

[107] *220 MHz Notice*, 4 FCC Rcd at 8597 (para. 27).

Channels 101-110	10
Channels 121-125	5
Channels 126-130	5
Channels 131-135	5
Channels 136-140	5
TOTAL	60

REGIONAL BLOCK	CHANNELS
Channels 171-180	10
Channels 186-200	15
Channels 1-10	10
Channels 11-20	10
Channels 31-50	20
TOTAL	65

67. Our proposed selection of particular frequency blocks for EA and Regional assignments is a consequence of the unique spectrum allocation of the 220-222 MHz band. That is, due to the fact that the upper base transmitting channels in the 220-222 MHz band are situated immediately adjacent to the lower base receiving channels, we currently require licensees operating base stations in the upper 40 channel assignments (*i.e.*, Channels 161-200) to reduce power when located within certain distances of base station receivers of licensees operating on the adjoining Channels 1-40.[108] Due to this circumstance unique to the 220-222 MHz band,[109] we also limit the base station transmitter power for stations authorized on Channels 196-200 to two watts.

68. In our EA and Regional assignments, we have therefore proposed that all but 10 of the Regional channels assignments be made on frequencies affected by this condition because Regional licensees, operating over much larger areas, will likely have more flexibility than EA licensees to situate their base stations.[110] We propose that licensees on these channel blocks coordinate amongst themselves to locate their base stations to avoid

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[108] Section 90.723(d) of the Commission's Rules, 47 C.F.R. § 90.723(d).

[109] For example, in other land mobile bands where base and mobile frequencies are provided, such as the 800 MHz and 900 MHz SMR bands, the base and mobile channels are separated by 45 and 39 MHz, respectively.

[110] Regional assignments are proposed on Channel blocks 171-180, 186-200, 1-10, 11-20, and 31-50.

interference.[111] We also propose to allow licensees operating on Channels 196-200 to operate at power levels greater than 2 watts if such licensees obtain the concurrence of all Phase I and Phase II licensees operating in their Region or in adjoining Regions on Channels 1-40.

69. This proposed channelling plan, along with our existing and proposed assignment of 50 channels for nationwide licensing (*i.e.*, 20 nationwide channels in Phase I and 30 nationwide channels in Phase II) will allow for an even distribution of spectrum among the three Phase II service areas. We believe this approach in the 220 MHz band will enable different-sized communications systems to develop and provide services to different populations of users. We seek comment on this plan and ask whether some other distribution of channels for EA and Regional licenses would be more appropriate.

(6) Procedures for Assignment of the 125 Channels

(a) General

70. If we adopt our proposals to make the 125 channels available on an equal basis to licensees using the spectrum for subscriber-based services and licensees using the spectrum to meet their internal communications needs, we will not be able to determine in advance of authorization which of these types of licensees will acquire the spectrum, and thus we will not be able to conclude with absolute certainty the principal use of this spectrum. The *Competitive Bidding Second Report and Order* provides guidance for determining the likely principal use of a service[112] and, as we observed previously in this Notice,[113] it is reasonable to conclude from our database that the vast majority of the more than 59,000 applicants for 220 MHz non-nationwide systems appear to intend to use their spectrum for for-profit services.

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[111] This is in keeping with our decision adopting rules for the broadband PCS service, where we noted that co-channel PCS licensees operating in adjoining areas could interfere with each other and thus would be required to coordinate frequency use in their boundary regions. *See* Amendment of the Commission's Rules To Establish New Personal Communications Services, GEN Docket No. 90-314, Second Report and Order, 8 FCC Rcd 7700, 7777 (para. 177) (1993) (*Broadband PCS Order), recon.* Memorandum Opinion and Order, 9 FCC Rcd 5947 (1994) (*Broadband PCS Order on Reconsideration); recon.* Further Order on Reconsideration, 9 FCC Rcd 4441 (1994) (*Broadband PCS Further Order on Reconsideration).* Licensees for 220 MHz service should use as a guideline in locating their stations the geographic separations provided in the Table in Section 90.723(d) of the Commission's Rules (47 C.F.R. § 90.723(d)) for the 220 MHz service.

[112] *Competitive Bidding Second Report and Order,* 9 FCC Rcd at 2353-2354 (paras 30-36).

[113] *See* para. 36, *supra.*

71. Also, our current rules do not restrict non-nationwide 220 MHz licensees using spectrum for internal communications from leasing excess capacity on their systems to provide service to subscribers. We propose to continue this provision for licensees authorized on the 125 channels. Thus, any licensees using these channels for their internal use and choosing to lease excess capacity will contribute to the overall use of the spectrum for the transmission or reception of communications signals to subscribers for compensation. Thus, we tentatively conclude that the principal use of our Phase II non-nationwide spectrum on the 125 channels is likely to be for the transmission or reception of communications signals to subscribers for compensation. In accordance with Section 309(j)(2)(a) of the Communications Act, we further tentatively conclude that mutually exclusive applications for initial licensing of these channels should be assigned through competitive bidding. We ask comment on this tentative decision and request that those suggesting otherwise provide justification for any differing conclusion.

(b) Public Safety and EMRS Entities

72. We tentatively conclude that we should continue, in Phase II, to maintain the 10-channel allocation for the Public Safety Radio Services and the 5-channel allocation for the EMRS. We also tentatively conclude that we should continue to authorize these channels on a first-come, first-served basis, with stations authorized at a single location, and with stations protected in accordance with our 120-km co-channel separation criteria. Because these channels will not be used principally for the provision of subscriber-based services for compensation, in accordance with Section 309(j) of the Communications Act, we also conclude that they should be assigned through random selection procedures.

73. Our current rules, however, permit Public Safety entities, including those eligible in the EMRS, to apply for *all* of the non-nationwide 220 MHz channels, including the 125 channels. Thus, because we have tentatively concluded that the principal use of the 125 non-nationwide channels is likely to be for the provision of subscriber-based service for compensation and therefore to be assigned through competitive bidding, we tentatively conclude that Public Safety and EMRS entities seeking these channels will be required to obtain them, when mutually exclusive situations occur, through competitive bidding. However, because we only received three applications from Public Safety entities for authorization on the Public Safety channels in Phase I, we believe that Public Safety users will be adequately accommodated by the channels that will be reserved for their use. We seek comment on these tentative conclusions.

(c) Federal Government Users

74. Our current rules permit Federal Government entities to be authorized on any of the 140 Phase I non-nationwide channels on a co-equal basis with non-Government users. However, given that we received *no* applications from Federal Government entities for non-

nationwide 220 MHz spectrum during Phase I, we anticipate that demand for 220 MHz spectrum by the Government will be satisfactorily met through assignment on the 10 Public Safety and 5 EMRS channels. Assignment on these channels, we believe, will be of particular interest to Federal Government agencies responsible for public safety and emergency medical services because it will enable them to communicate with their counterparts at the State and local level. In the *220 MHz Report and Order*, we decided that mutually exclusive applications for 220 MHz channels involving Government and non-Government applicants would be resolved in a "single, unified lottery" in which all applicants "would have an equal probability of emerging as the tentative selectee."[114] We continue to believe that mutually exclusive applications for the 15 channels available to both Government and non-Government entities be assigned through a single unified lottery. We seek comment on these proposals and will coordinate them with the National Telecommunications Information Agency (NTIA).

(7) License Term

75. As proposed for the nationwide 220 MHz service, we similarly propose the adoption of 10-year license terms for both EA and Regional 220 MHz licensees. We believe that a 10-year license term will encourage investment in this service by EA and Regional licensees. This proposal is also in keeping with our decision in the *CMRS Third Report and Order*, where we indicated that existing CMRS licensees would, at renewal, be granted 10-year license terms.[115] We therefore propose a 10-year license term for EA and Regional 220 MHz authorizations and seek comment on this proposal. We also propose, to minimize the adminstrative burden on Public Safety and EMRS entities, to issue 10-year license terms for authorizations on the Public Safety and EMRS channels. We seek comment on this proposal.

C. TECHNICAL AND OPERATIONAL RULES

1. Fixed Operation for Phase I and Phase II Licensees

76. In our *220 MHz Allocation Order*, we reallocated the 220-222 MHz band for private land mobile radio to provide spectrum for the development of narrowband, spectrum efficient technologies.[116] Our rules for the 220 MHz service permit fixed operations only on

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[114] *220 MHz Report and Order*, 6 FCC Rcd at 2356 (para. 62).

[115] *CMRS Third Report and Order*, 9 FCC Rcd at 8157 (para. 386).

[116] *220 MHz Allocation Order*, 3 FCC Rcd at 5287 (para. 21).

an ancillary basis to primary land mobile operations[117] to encourage manufacturers to invest in the development of narrowband land mobile technologies.[118]

77. We continue to believe that 220 MHz band operations will play an important role in the provision of mobile communications services and that licensees in this service will provide a market for 5 kHz, narrowband radio technologies. However, we now tentatively conclude that our current restrictions on the use of fixed communications in the band are not necessary. To compete effectively with the growing number of competing services in the mobile communications marketplace (*e.g.*, the Domestic Public Cellular Radio Telecommunications Service, the narrowband and broadband Personal Communications Services, the 900 MHz SMR Service, and the 800 MHz SMR Service), 220 MHz licensees will need the ability to provide a wide array of communications services to the public. Lifting our current restriction on primary fixed use in the 220 MHz band would serve to broaden the array of services offered by these licensees and would thus benefit consumers. We tentatively conclude, therefore, that there is no longer a need to restrict the 220 MHz band to mobile operations. We thus propose to modify our current rule that allows fixed operations only on an ancillary basis to primary land mobile communications and permit such operations on a primary basis for 220 MHz licensees. The proposed removal of this prohibition would apply to both nationwide and non-nationwide non-Government and Government, Phase I and Phase II licensees and would apply both to licensees offering service to subscribers and licensees using spectrum for internal communications. We request comment on this proposal.

2. Secondary, Fixed Operations

78. We have before us a Petition for Rulemaking filed by Fairfield Industries, Inc. (Fairfield), requesting that individuals involved in geophysical telemetry be permitted to operate temporary, fixed 220 MHz facilities, on a secondary basis without the requirement that such operation be on an ancillary basis to the licensee's primary mobile operations.[119] Our current rules allow 220 MHz licensees to provide operational fixed facilities for "ancillary, signalling and data transmision" subject to certain requirements, such as that ancillary operations be on a secondary, non-interference basis to the primary mobile operation of any other licensee.[120] Fairfield points out that those performing geophysical telemetry would typically operate in remote, uninhabited areas and at relatively low power

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[117] Sections 90.731 and 90.733 of the Commission's Rules, 47 C.F.R. §§ 90.731, 90.733.

[118] *220 MHz Report and Order*, 6 FCC Rcd at 2368 (para. 88).

[119] The Commission sought comment regarding the petition, RM-8506, through release of a Public Notice on August 16, 1994, Report No. 2026. No comments were received.

[120] Section 90.731(a) of the Commission's Rules, 47 C.F.R. § 90.731(a).

levels (*i.e.*, two watts or less), thereby presenting little risk of interference to co-channel 220 MHz stations.

79. We find merit in Fairfield's request and we believe that it is in the public interest to allow the type of operation they propose.[121] We believe, however, that rather than limiting secondary, fixed use of 220 MHz spectrum only to licensees employing temporary facilities for geophysical telemetry operations, even greater use of the spectrum could be realized by allowing any and all types of secondary, fixed operations. In proposing to expand this permissible use of the spectrum, however, we believe that it is necessary to propose certain additional restrictions on this type of operation. Section 90.261 of our rules places a number of technical limitations (*e.g.*, power, antenna directivity) on licensees using the 450-470 MHz band for secondary, fixed operations. We propose similar restrictions on licensees operating secondary, fixed facilities in the 220 MHz band. Specifically, we propose that such operation be limited to a maximum of two watts ERP for licensees operating within 60 kilometers of the center of any of the urban areas listed in Section 90.741 of our rules[122] and a maximum of five watts ERP for licensees operating beyond 60 kilometers of these areas. Such limitations, we believe, will allow secondary, fixed operation with minimal likelihood for interference to regularly authorized Phase I and Phase II licensees that may be providing either mobile or fixed services. We propose to accept applications for authorization of secondary, fixed use of the 220 MHz band, without the requirement of frequency coordination, upon adoption of final rules in this proceeding. We request comment on these proposals, including any suggested changes to the technical restrictions proposed and any comment as to whether we should further restrict secondary, fixed use of the 220 MHz band to operations at strictly temporary locations, as provided for under Section 90.137 of our rules.[123]

3. Aggregation of Five kHz Channels

80. After reallocating the 220-222 MHz band, we adopted rules "to initiate the introduction of narrowband technology for private land mobile radio operations in the 220-222 MHz frequency band."[124] Since the adoption of the *220 MHz Report and Order*, we have granted nearly 3,800 authorizations to licensees to construct and operate stations

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[121] *See* Fairfield Petition at ii (use of spectrum to assist in the search for domestic oil and gas reserves).

[122] Section 90.741 of the Commission's Rules identifies the coordinates for the center of each of these areas. 47 C.F.R. § 90.741.

[123] Section 90.137 of the Commission's Rules provides, among other things, that temporary operation be limited to a period of no more than one year. 47 C.F.R. § 90.137.

[124] *220 MHz Report and Order*, 6 FCC Rcd at 2372 (para. 125).

employing five kHz channels. Various equipment manufacturers have developed and are now installing these five kHz narrowband systems nationwide. We therefore tentatively conclude that it is not necessary to continue to provide that 5 kHz technology be utilized in the 220 MHz band to the *exclusion* of all other technologies.

81. We believe that our current five kHz-wide channels unnecessarily restrict the array of services that can be provided in the 220 MHz band and prevent other, perhaps equally spectrum efficient, technologies from being employed in the band. For example, time-division technology used in other bands may be at least as spectrally efficient as 5 kHz channels. Such systems, however, employ wider channels than are authorized in the 220 MHz band (*e.g.*, cellular radio systems operate in 30 kHz channels and 800 MHz and 900 SMR systems operate on 25 kHz and 12.5 kHz channels, respectively). To allow licensees the flexibility to take advantage of these and other spectrum efficient technologies, it is necessary to remove the requirement of the use of five kHz channels in the 220 MHz band and allow licensees to aggregate their authorized frequencies to create wider bandwidth channels. Removing this restriction would, for example, allow Phase II licensees to aggregate the frequencies in the proposed 10-channel blocks to create 50 kHz blocks. This would enable 220 MHz licensees to use their limited amount of spectrum to employ the widest variety of technologies to best meet the communications requirements of consumers.

82. Allowing 220 MHz licensees to aggregate their channels is a significant departure from our original decision in the *220 MHz Report and Order*. In discussing the possible assignment of 220 MHz channel blocks on contiguous channels in the *220 MHz Notice*, we specifically declined to propose allowing 220 MHz licensees to "group narrowband channels to create a wideband voice channel."[125] However, in the *900 MHz Allocation Order*, allocating the 900 MHz private land mobile frequencies, we decided to adopt a contiguous channel assignment scheme to "provide increased flexibility to employ spectrum efficient digital systems,"[126] and decided to allow 900 MHz licensees to "combine contiguous channels."[127] We now tentatively conclude that the flexibility we sought for licensees in the 900 MHz band should be available to licensees in the 220 MHz band. We therefore propose that both Phase I and Phase II licensees be permitted to aggregate their contiguous channels to create wider bandwidth channels and we seek comment on this proposal.[128]

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[125] *220 MHz Notice*, 4 FCC Rcd at 8597 n. 49 (para. 27).

[126] *900 MHz Allocation Order*, 2 FCC Rcd at 1835 (para. 74).

[127] *Id.* at 1835 (para. 77). *See* Section 90.645(h) of the Commission's Rules, 47 C.F.R. § 90.645(h). Channels authorized in the 896-901/935-940 MHz band under Part 90 are assigned in blocks of 10 contiguous 12.5 kHz channels.

[128] We note also that while the nationwide Phase I channels were assigned in contiguous channel blocks, most of the non-nationwide Phase I channels were assigned on the 5-channel trunked assignments, which are composed of non-contiguous channels. Thus, only non-nationwide licensees

83. In allowing licensees to aggregate their five kHz channels, we are mindful of our original goal in reallocating the 220-222 MHz band and establishing the 220 MHz service -- *i.e.*, to encourage the development of spectrally efficient technologies. However, we recognize that in recent years spectrum efficiency has been achieved not only through the use of narrowband channelization but through the use of TDMA technologies employing advanced voice coder and digital modulation techniques. We therefore tentatively conclude that licensees choosing to aggregate channels must maintain a spectral efficiency at least equivalent to that obtained through five kHz channelization.[129] We ask, alternatively, whether our proposal to license through competitive bidding provides sufficient incentives for licensees to use their spectrum efficiently.

84. The effect of these proposals will be that 220 MHz licensees would no longer be required to adhere to the existing channel emission masks at the edge of each of their authorized five kHz channels. However, to prevent adjacent channel interference to licensees operating on channels outside their channel block, we propose that 220 MHz licensees be required to conform to the mask at the outer edge of their five-, 10-, 15-, or 20-channel blocks. Allowing licensees to refrain from complying with the emission masks of each of the "inside" channels in their block will result in licensees transmitting stronger signals, off-channel, than are currently permitted by our rules. We tentatively conclude, however, that because licensees, in constructing their base stations, must adhere to the required co-channel separation criteria with respect to all co-channel licensees in their area, the increased strength of off-channel signals will not result in any increased likelihood for harmful interference to co-channel licensees.[130] We seek comment on this tentative conclusion.

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authorized on the individual channels (*i.e.*, Channels 161-170, Channels 171-180, and Channels 186-195) would be able to take advantage of this option.

[129] Under this requirement, licensees who choose to aggregate their channels but do not intend to use TDMA technology could demonstrate spectral efficiency in other ways -- *e.g.*, by employing a data rate with a relatively high bit/hertz ratio.

[130] For example, if an EA licensee aggregates consecutive Channels 1 and 2 and does not adhere to the emission masks between these channels, then, because the Phase I licensees operating on both Channels 1 and 2 are situated at least 120 kilometers away from the EA licensee (the co-channel separation distance) the increased signal on spectrum between Channels 1 and 2 will not cause interference to either of these licensees. A factor that we believe further lessens the likelihood for interference in this situation is that the emission mask for 220 MHz channels currently provides for no signal attenuation at all within the authorized bandwidth (*i.e.*, $\pm$ two kHz from the center frequency). *See* Section 90.209(l) of the Commission's Rules, 47 C.F.R. § 90.209(1).

4. Paging Operations

85. In the *220 MHz Report and Order*, we decided not to authorize paging-only operations in the 220 MHz band because "there are other frequency bands available for paging operations."[131] We decided, instead, to permit paging only on an ancillary basis to a licensee's primary land mobile operations.[132] We have proposed to allow 220 MHz licensees to provide non-ancillary, fixed communications because, among other things, this would enable 220 MHz licensees to compete more effectively in the mobile communications marketplace with providers in other bands. We believe that these considerations also justify our allowing Phase II 220 MHz licensees to perform paging operations on a primary basis.

86. In recent years we have allocated or expressed the intention of allocating increasing amounts of spectrum for regional and nationwide paging operations. For example, we allocated the narrowband PCS spectrum, which will likely be used for advanced paging services.[133] We decided in the *CMRS Third Report and Order* that market-area licensing analagous to licensing for narrowband PCS would be considered for future licensing in both the private carrier and common carrier paging services.[134] Thus, the fact that there are many other spectrum bands where regional and nationwide paging operations will be authorized should lessen any concerns that removing the current restriction on paging could turn the 220 MHz band into a band used primarily for paging services and have a materially adverse effect on the development of the 5 kHz industry.

87. We continue to believe that the 220 MHz band is well suited to providing two-way land mobile services. In permitting paging on a primary basis in the 220 MHz band, we merely provide additional spectrum for this rapidly growing communications service. Also, by allowing 220 MHz licensees to offer this service, we enable such licensees to compete more effectively in the wireless marketplace. We therefore propose to remove the current restriction on paging operations for all Phase I and Phase II licensees, and we seek comment on this proposal.

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[131] *220 MHz Report and Order*, 6 FCC Rcd at 2368 (para. 89).

[132] *Id.*

[133] *Narrowband PCS Order*, 8 FCC Rcd at 7162.

[134] *CMRS Third Report and Order*, 9 FCC Rcd at 8026 (para. 67).

5. Construction Requirements

a. Nationwide Licensees

88. In adopting our rules for the 220 MHz service in 1991, we envisioned that 220 MHz radio systems would be designed and configured in the traditional manner of private land mobile radio systems, *i.e.*, through the construction and operation of single, high powered base stations providing signal coverage over an extended area. Our construction rules for nationwide 220 MHz licensees therefore reflected this type of system operation -- *i.e.*, requiring licensees to construct base stations in at least 70 different markets over an extended period of time.[135] Since 1991, we have allocated spectrum and adopted rules for other communications services, such as broadband and narrowband PCS, where less traditional forms of systems design are contemplated. In so doing, we have adopted construction requirements for authorizations based not on the construction of individual stations, but on the more flexible approach of requiring a licensee to provide a minimum amount of "coverage" within its authorized area of operation. We also indicated in the *CMRS Third Report and Order* that CMRS systems licensed on a wide-area basis should be afforded long construction periods combined with interim coverage requirements to ensure that licensees begin providing service to portions of their service area before their construction period expires.[136]

89. In this proceeding, we are proposing rules that will provide operational flexibility to enable future 220 MHz licensees to offer a wider variety of communications services than are currently permitted in the 220 MHz service. While the types of offerings envisioned for the 220 MHz service may not exactly parallel those of these other communications services, we believe that it is appropriate to adopt the same type of broad coverage requirements for the Phase II nationwide 220 MHz service as we have adopted for these other services. Our rules for the narrowband PCS service now require nationwide licensees to construct base stations that provide coverage to a composite area of 750,000 square kilometers or serve 37.5 percent of the United States population within five years of initial license grant and to provide coverage to 1,500,000 square kilometers or 75 percent of the population within 10 years of grant.[137] We believe that these standards are appropriate for the 220 MHz service

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[135] Section 90.725 of the Commission's Rules, 47 C.F.R. § 90.725. The rules provide that licensees granted commercial nationwide authorizations must meet construction benchmarks two, four, six, and ten years after initial license grant. Non-commercial nationwide licensees must construct and operate base stations in a minimum of 70 markets within five years of initial license grant.

[136] *CMRS Third Report and Order*, 9 FCC Rcd at 8076 (para. 179).

[137] Section 24.103 of the Commission's Rules, 47 C.F.R. § 24.103. The rules also indicate that in demonstrating compliance with the prescribed construction requirements, licensees must base their calculations on signal field strengths that ensure reliable service for the particular type of technology utilized and that they may use any service radius contour formula developed or generally used by

and therefore propose the adoption of the nationwide narrowband PCS coverage requirement for Phase II nationwide 220 MHz licensees. We seek comment on this proposal.

90. Additionally, because we propose to adopt rules that would permit future 220 MHz licensees to offer a variety of communications services, we are concerned that certain of these services, such as fixed, point-to-point operations, may not lend themselves to compliance with the strict construction requirement we have proposed.[138] We addressed this particular concern in our recently-adopted rules for the broadband PCS and 900 MHz SMR services. In the latter, we decided that a 900 MHz SMR licensee operating in an MTA would be permitted to meet its construction requirement by submitting a showing demonstrating that it is providing "substantial service."[139] We believe that such a showing of "substantial service" as an alternative to a coverage requirement is appropriate for nationwide Phase II 220 MHz licensees who, in implementing their systems, may not be able to meet our strict coverage standards, but may still be able to provide substantial, nationwide service to the public. We therefore propose to allow nationwide 220 MHz licensees, as an alternative to meeting the construction requirements as defined above, to submit showings demonstrating the provision of appropriate levels of substantial service to the public at the five-year and 10-year construction benchmarks. We seek comment on this proposal. We also ask commenters who would construct systems that would lend themselves to a demonstation of substantial service to indicate the types of "build-outs" that would be appropriate for their particular systems and what period of time should be required to achieve such build-outs.

91. Finally, consistent with our rules for the PCS services,[140] we propose that licensees be required to submit maps and other supporting documents to demonstrate compliance with the five-year and 10-year benchmarks, and that failure on the part of a nationwide licensee to meet either its five-year or 10-year construction requirement will result in forfeiture of its nationwide authorization. We seek comment on these proposals.

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industry, provided that such a formula is based on the technical considerations of its system.

[138] Fixed, point-to-point systems, for example, provide service in a linear manner, and thus a coverage "area" calculation is not applicable.

[139] *900 MHz Second Report and Order*, at para. 4. For the broadband PCS rules, see Section 24.203(b) of the Commission's Rules, 47 C.F.R. § 24.203(b).

[140] Sections 24.103(f) and (h) and 24.203(b) and (c) of the Commission's Rules, 47 C.F.R. §§ 24.103(f) and (h), 24.203(b) and (c).

b. EA and Regional Licensees

92. Our current rules require non-nationwide 220 MHz licensees to construct their stations within 12 months of initial authorization.[141] Phase I non-nationwide licensees, however, are authorized to operate a single base station at a single site. With the exception of licensees operating on channels in the Public Safety and EMRS pools, Phase II non-nationwide licensees will be authorized to operate any number of stations within their authorized EAs and Regions. In other wireless communications services licensed within Commission-defined areas (*e.g.*, narrowband and broadband PCS, 900 MHz SMR) we have adopted rules that require licensees to provide coverage to various percentages of the population or geographic area within their region at various, prescribed time intervals after initial authorization. For example, we require 900 MHz SMR (MTA) licensees to provide coverage to one-third of the population of their service area within three years of initial authorization and two-thirds of the population within five years, or permit licensees, at the five-year mark, to submit a showing demonstrating that they are providing "substantial service."[142] For regional narrowband PCS licensees, we require construction of base stations to provide coverage to a composite area of 150,000 square kilometers or serve 37.5 percent of the population of the Region within five years of initial authorization and provide coverage to 300,000 square kilometers or serve 75 percent of the Region within 10 years.[143]

93. In determining the most appropriate construction requirements for 220 MHz EA and Regional licensees, we must take into consideration: (1) the size of EAs and Regions compared to the size of the service areas established for the other wireless services; and (2) the fact that, in many instances, incumbent Phase I licensees will be operating on some or all of the EA and Regional licensee's authorized channels, and they will have to afford co-channel protection to these licensees. The communications service that resembles the 220 MHz service most closely in these respects is the 900 MHz SMR service.[144] We thus believe

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[141] The requirement that non-nationwide 220 MHz service licensees construct their stations and begin operation within eight months of initial authorization was adopted in the *220 MHz Report and Order*, 6 FCC Rcd at 2366 (para. 76). Subsequently, in the *CMRS Third Report and Order*, we decided that 220 MHz service licensees -- both CMRS and PMRS alike -- should be afforded a 12-month period to construct and operate their stations. *CMRS Third Report and Order*, 9 FCC Rcd at 8077 (para. 184).

[142] *900 MHz Second Report and Order*, at para. 40.

[143] Section 24.103(b) of the Commission's Rules, 47 C.F.R. § 24.103(b).

[144] In that service, we initially authorized 10-channel licenses to 20 licensees in and around each of the top 50 markets in the Nation and recently established rules for the licensing of this spectrum in the 51 MTAs surrounding these markets. In the 220 MHz service, we have similarly licensed spectrum use, mostly in the form of 20 five-channel trunked system authorizations, and, while we have not analyzed our database to determine the exact locations of these authorizations, we believe that it is reasonable to assume that the majority of 220 MHz station authorizations are situated in and

that it is appropriate to propose construction requirements for licensees in the 220 MHz band that parallel the three- and five-year construction requirements of the 900 MHz SMR service, but believe that licensees should meet these requirements five and ten years after initial authorization.

94. We therefore propose that EA and Regional licensees be required to construct base stations to provide coverage to one-third of the population of their EA or Region within five years of initial authorization and two-thirds of the population of their EA or Region within ten years. In keeping with our proposals for the nationwide 220 MHz service, we believe a showing of "substantial service" as an alternative to coverage requirements is acceptable because of the fact that certain EA and Regional licensees may ultimately provide communications services of the type that may not be conducive to meeting our strict coverage requirements but nevertheless provide what we would consider to be substantial service to the public in their authorized area. We therefore propose to allow EA and Regional licensees, as an alternative to meeting the construction requirements as defined above, to submit showings demonstrating the provision of appropriate levels of substantial service to the public at their interim and final construction benchmarks. We seek comment on this proposal. As discussed above for nationwide licensees, we also ask commenters who would construct EA and Regional systems that would lend themselves to a demonstation of substantial service to indicate the types of "build-outs" that would be appropriate for their particular systems and what period of time should be required to achieve such build-outs.

95. In proposing these coverage requirements, we acknowledge that Phase II licensees will have to provide co-channel protection to incumbent licensees and that this could inhibit their ability to meet the requirements. However, in our decison in the *900 MHz Second Report and Order*, we noted the presence of incumbent 900 MHz SMR licensees within the MTAs in which 900 MHz SMR (MTA) licensees would be authorized and decided that an MTA licensee would have to satisfy its coverage requirements "regardless of the extent of the presence of incumbents within its MTA block."[145] We also indicated that MTA licensees would "assume the responsibility of obtaining the right to use sufficient spectrum to provide coverage if such spectrum was not readily available" and could acquire this spectrum through "buyouts of incumbent licensees" or "through resale or other leasing arrangements with incumbents."[146] We similarly believe that Phase II 220 MHz licensees should have to meet their construction requirements, even if some or all of their channels are authorized to co-channel Phase I licensees in their area. We believe that these benchmarks are attainable, especially if Phase II licensees employ the various methods suggested for 900 MHz MTA licensees in satisfying their coverage requirements.

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around the Nation's major markets.

[145] *900 MHz Second Report and Order*, at para. 42.

[146] *Id.*

96. Finally, consistent with our proposals for the nationwide 220 MHz service, we propose that EA and Regional licensees be required to submit maps and other supporting documents to demonstrate compliance with their interim and final construction benchmarks, and that failure on the part of a licensee to meet either its interim or final construction requirement will result in forfeiture of its authorization. We seek comment on these various proposals.

c. Licensees on Public Safety and EMRS Channels

97. Because we tentatively conclude that the Public Safety and EMRS channels should continue to be authorized on a single-station basis, we propose to continue to require Phase II licensees operating on these channels to meet the existing 12-month construction requirement for non-nationwide 220 MHz licensees. We seek comment on this proposal.

6. Field Strength Limit at the EA and Regional Border

98. In the various wireless communications services we currently license within Commission-defined geographic areas (*e.g.*, Cellular, PCS, 900 MHz SMR) we prescribe limits on the strength of signals licensees may provide at the borders of their service areas.[147] In our existing rules for the 220 MHz service we do not define a particular "service area" for non-nationwide stations, but indicated in the *220 MHz Report and Order* that stations operating at maximum authorized power and antenna height would "provide a service area with a 38 dBu contour at about 45 kilometers (28 miles)."[148] We believe that, for effective operation, a Phase II licensee should be permitted to transmit a signal of at least 38 dBuV/m thoughout its area of service, and we therefore propose a field strength limit of 38 dBuV/m at the border for EA and Regional 220 MHz licensees.[149] To allow flexibility on the part of licensees to exceed this limit if necessary, we also propose that licensees be allowed to transmit signals greater than 38 dBuV/m at their border if all affected, co-channel EA and Regional licensees agree to the higher field strength. Under this proposal, if interference were to occur to transmissions at or near the border between co-channel licensees, licensees would be expected to coordinate with one another and modify their facilities as necessary to minimize interference. We seek comment on these proposals.

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[147] *See, e.g.*, Sections 24.236 and 90.671 of the Commission's Rules, 47 C.F.R. §§ 24.236, 90.671.

[148] *220 MHz Report and Order*, 6 FCC Rcd at 2371 (para. 115).

[149] In calculating the predicted 38 dBuV/m contour, licensees will use the F(50,50) field strength chart for Channels 7-13 in Section 73.699 of our Rules (Figure 10), with a 9 dB correction factor for antenna height differential.

7. Protection of Phase I Licensees

99. We have granted approximately 3,800 non-nationwide authorizations in Phase I of licensing. Most of these Phase I licensees are licensed on the channels we propose to assign to EA and Regional licensees in Phase II. To ensure that EA and Regional licensees will be able to construct their systems without causing interference to Phase I licensees, we propose to establish minimum co-channel separation criteria for stations operated by EA and Regional licensees. Specifically, we propose that EA and Regional licensees ordinarily not be permitted to construct their stations less than 120 kilometers from constructed and operating Phase I, co-channel stations. This 120-kilometer station separation criterion for co-channel 220 MHz stations is currently provided in our rules.[150] We also recognize that EA and Regional licensees may choose to employ low-power stations as part of their wide-area systems. Therefore, as provided in the rules, Phase II licensees will be permitted to operate less than 120 kilometers from co-channel stations if they provide us with a technical analysis demonstrating at least 10 dB protection to the 38 dBuV/m contour[151] of the existing licensee's station. We additionally propose that Phase II licensees be allowed to construct and operate stations less than 120 kilometers from existing co-channel stations or with less than 10 dB protection to an existing co-channel station's 38 dBuV/m contour if they obtain the consent of the affected co-channel licensees. We believe these proposed rules will adequately protect existing 220 MHz stations and will enable Phase II EA and Regional licensees to create viable systems within their regions. In the *CMRS Third Report and Order*, we indicated that 900 MHz MTA licensees could "negotiate mergers, buyouts, frequency swaps, or similar arrangments with incumbent systems" to minimize the need for providing this protection.[152] We believe that Phase II EA and Regional licensees could employ these same methods in developing their 220 MHz systems. We request comment on these proposals.

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[150] Section 90.723(f) of the Commission's Rules, 47 C.F.R. § 90.723(f).

[151] *Id.* This 10 dB of protection must be demonstrated by showing that the predicted signal from an EA or Regional licensee's station(s) does not exceed 28 dBuV/m at the predicted 38 dBuV/m contour of the Phase I licensee's station(s). The predicted signal from the EA or Regional licensee's station would be calculated using the F(50,10) field strength chart for Channels 7-13 in Section 73.699 of our Rules (Figure 10a), with a 9 dB correction factor for antenna height differential. The predicted signal(s) from the Phase I licensee's station would be calculated using the F(50,50) field strength chart for Channels 7-13 in Section 73.699 of our Rules (Figure 10), with a 9 dB correction factor for antenna height differential. We also propose to modify Section 90.723(f) to identify use of these field strength charts as the appropriate method for calculating the prescribed 10 dB protection a Phase I licensee must provide to another co-channel Phase I licensee.

[152] *CMRS Third Report and Order*, 9 FCC Rcd at 8052 (para. 118).